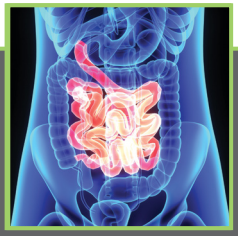
coeliac uk
support – campaigns – research




Coeliac UK's Research Conference 2016

Coeliac disease: current controversies and advances

Wednesday 9 March 2016

Coeliac disease: current controversies and advances

Royal College of Physicians
11 St Andrew's Place, Regent's Park, London, NW1 4LE

Chaired by Dr Huw Jenkins

10.00 **Arrival and networking - refreshments**

10.30 **Coeliac UK welcome - Chief Executive Sarah Sleet**

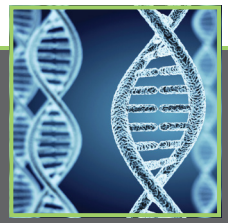
10.35 **Pitfalls in biopsy readout in coeliac disease**
Prof Markku Mäki. Followed by Q&A session.

11.05 **Emerging issues in the diagnosis of coeliac disease in paediatrics**
Dr Peter Gillett. Followed by Q&A session.

11.35 **Oats in coeliac disease - do we have the full picture?**
Prof Knut Lundin. Followed by Q&A session.

12.05 **Lunch and poster session**

13.15 **Therapeutic advances in coeliac disease**
Prof Ludvig Sollid. Followed by Q&A session.

13.45 **Could hookworms act as a living drug for coeliac disease?**
Prof David Pritchard. Followed by Q&A session.

14.15 **Measuring quality of life in coeliac disease; the development of the Coeliac Disease Assessment Questionnaire (CDAQ)**
Dr Helen Crocker. Followed by Q&A session.

14.45 **Break - refreshments**

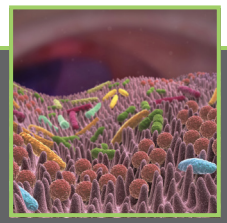
15.05 **Refractory coeliac disease and malignancy in coeliac disease**
Prof Christophe Cellier. Followed by Q&A session.

15.35 **Non coeliac gluten sensitivity**
Prof Simon Murch. Followed by Q&A session.

16.05 **Chair's closing remarks and presentation of poster prize**

16.15 **Close of meeting**

This event has been kindly sponsored by Casillo Group, Cereal Partners Worldwide, ImmunsanT, Provena and Thermo Fisher.

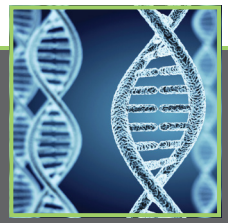
Sarah Sleet
Chief Executive, Coeliac UK

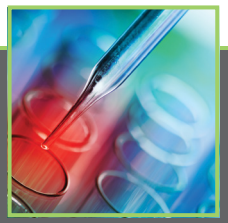
Welcome to the first day of Coeliac UK's Research Conference 2016. We hope this conference will contribute to your ongoing professional development and provide an opportunity to share experiences.

As part of our commitment to supporting research we aim to build a critical mass for future research and also encourage and inspire a new generation of researchers focusing on coeliac disease. We have joined forces with the Medical Research Council to offer jointly funded Fellowships. We want to encourage more high quality applications and so please do visit the MRC website (www.mrc.ac.uk) to see if this is of interest to you. The next round for applications opens in July.

In the last 12 months, we have funded five further research projects. These include a study aimed at identifying those people with coeliac disease who may have an immune response to gluten-free oats, a combined metabolome and metagenomics approach in coeliac disease to understand the mechanisms in people with and without full symptomatic response to the gluten-free diet, and a study exploring the Coeliac Disease Assessment Questionnaire's sensitivity to change.

So enjoy this conference and thank you for supporting our work in disseminating knowledge about coeliac disease to you and your professional colleagues.



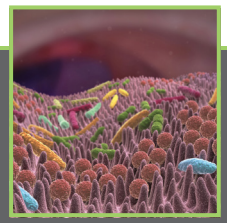
Huw Jenkins
Chair of Coeliac UK's Research Conference

Biography

Dr Huw Jenkins is a paediatric gastroenterologist based in Cardiff where he has worked as a consultant since 1988, having trained in the specialty at The Hospital for Sick Children, Great Ormond Street. He practises as part of a clinical network in paediatric gastroenterology in South and Mid Wales and has published widely on a variety of paediatric gastroenterology topics. He was President of the British Society for Paediatric Gastroenterology, Hepatology and Nutrition from 2007-10, a member of the European Society for Paediatric Gastroenterology, Hepatology and Nutrition since 1989, a Council member of the British Society of Gastroenterology 2007-10 and a Council member of the RCPCH 2003-11.

He was the first Director of Healthcare Services for Children and Young People in Wales, 2003-8, responsible for the production and publication of the National Service Framework for Children and Young People and the Children and Young People Specialist Services Project for Wales. He remained an Advisor to the Minister of Health and Social Care, Welsh Assembly Government until 2011.

He has been involved in the production of NICE guidance, remains a member of the Claims Advisory Committee for the Medical Protection Society and is a Professional Advisory member on several medical charities, including Vice Chair of the Coeliac UK Health Advisory Council.

Prof Markku Mäki
University of Tampere and Tampere University Hospital, Finland

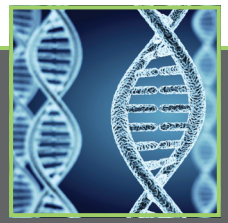
Biography

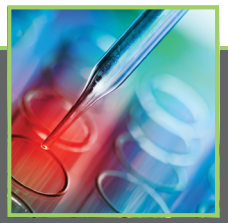
Markku Mäki, MD, PhD, is professor and coeliac disease researcher at the University of Tampere, and Tampere University Hospital, Finland. He completed his PhD in childhood diarrheal diseases in 1982 and has after that focused his academic research on CD and small intestine mucosal biology.

He is a current Board member of the patient organisation, the Finnish Celiac Society, and has previously held the posts of President of the Society and Chair of the Scientific Advisory Board. PubMed lists some 270 coeliac disease articles by Mäki and his Hirsch index is 64.

Lately Professor Mäki has been involved in novel drug trials in coeliac disease and his interest is in outcome measures. He works also as an Advisory Board member for several companies working within coeliac disease.

He has organised several international scientific coeliac disease symposia. Professor Mäki received the Wm. K. Warren Jr. Prize in Celiac Disease in Clinical/Translational Research, San Diego, USA, in 2010. Professor Mäki is a permanent member of the Finnish Academy of Science and Letters and the President of Finland granted him the honour of Knight, First Class, of the Order of the White Rose of Finland in 2006.



Pitfalls in biopsy readout in coeliac disease

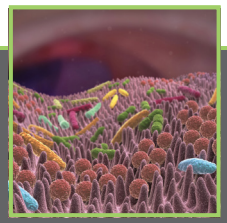
Abstract

At present, the small intestinal mucosal, gluten induced, lesion is the gold standard for diagnosing coeliac disease (CD). The spectrum of duodenal mucosal changes contains two separate measurable parameters, inflammation reflected by intraepithelial lymphocytic infiltration and morphological damage which includes villous atrophy and crypt hyperplasia. Usually the damage is evaluated using grouped classification eg Marsh classes. Recent studies have shown poor reproducibility when using the results of grouped classification.

We validated the morphometric analyses of small intestinal readouts in CD using our standard operating procedures (SOP). The SOP includes teaching technicians to obtain correctly oriented cuttings. A crucial step in the procedure is that the evaluator is able to identify biopsies in which the plane of sectioning is correct and thus measurements of villus crypt units are viable. Tangential cuttings should not be evaluated because of high risk of misinterpretation, instead recuttings should be requested. The evaluator should identify longitudinally cut crypts on the histological slides and not focus only on villi. An initial finding of Marsh 0 - 1 is easily corrected to actually be Marsh 3a, 3b or even 3c.

Recent CD guidelines recommend the acquisition of duodenal bulb biopsies for diagnosis. This is in conflict with previously reported evidence and routine practice from the 1960s. We used our SOPs for anatomical bulb biopsy readings and found specimens are often unsatisfactory for evaluation and morphological injury with crypt hyperplasia being common in the bulb, even without CD.

Digital image analysis of small intestinal biopsies, allowing quantitative villus height crypt depth ratios and CD3-positive intraepithelial cell counts, holds promise in CD clinical drug trials, academic research and routine clinics. Our digital histomorphometry biopsy evaluation system will be presented.

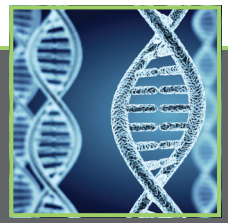
Dr Peter Gillett
Consultant Paediatric Gastroenterologist, Royal Hospital for Sick Children, Edinburgh

Biography
Dr Peter Gillett is a Consultant Paediatric Gastroenterologist at the Royal Hospital for Sick Children, Edinburgh. His training was in Newcastle and Edinburgh and the Children's Hospital in Vancouver between 1997 and 1999.

He won the Inaugural JA Campbell Young Investigator of the Year Award in 1999 from the Canadian Celiac Association jointly with his wife Helen Gillett (who established an anti-tTG assay in Edinburgh and then Vancouver) and completed research projects in children with Type I Diabetes and in Turner Syndrome.

His interests are coeliac disease, upper GI disorders (primarily gastro-oesophageal reflux disease and H pylori), endoscopy and constipation and its improved management. He has a special interest in GI problems in neurodevelopmental disorders and is a Specialist Advisor in Gastroenterology to the Cornelia de Lange Society (CdLS) and the CdLS World Federation.

He established the SE Scotland regional coeliac service in 2001 and has been an Advisor to Coeliac UK for the last 10 years, regularly speaking at local meetings to update Members. Research within the department has been funded partly

by Coeliac UK and the Gloag family foundation and he is part of a collaborative group within Edinburgh promoting coeliac research.

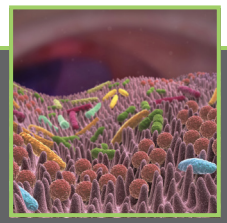
He has been a member of the Scottish Government Group developing the Gluten-Free Food Service, advising on medical issues and is a member of the current NICE Coeliac Disease Quality Standard Development Group.

Emerging issues in the diagnosis of coeliac disease in paediatrics

Abstract
Recent ESPGHAN 2012 and BSPGHAN/CUK guidance reflected increasing evidence in childhood, to make a secure 'no biopsy' diagnosis and avoid invasive procedures. The guidance is being 'road tested' formally by the ProCeDE study, and not yet published in full, but research based on that guidance is widely available for review. Many have taken this on with great enthusiasm but timely audit/review of its functionality (and its pitfalls and cost effectiveness) needs to be undertaken.

In addition, the increasing prevalence of the condition, no doubt a reflection of increased awareness in many areas adds an extra dimension to ensuring adequate access to timely diagnosis, making sure each area's assays are robust and accurate. Interpretation of HLA typing as part of assessment and standardisation of approach also needs to happen in the UK.

"A national registry of childhood (and I believe adult) diagnoses working with BSPGHAN and BSG networks would be a massive step towards ensuring high quality epidemiological research and ensuring equity across the UK.
In this talk I aim to review 'where we are' with this new approach, some potential areas where the guidance could be rationalised/revisited and detail evidence on the increased numbers being diagnosed."

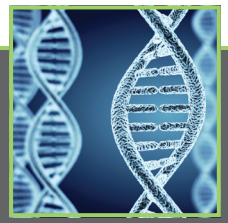



Prof Knut Lundin
Clinical Medicine and Department of Transplantation, University of Oslo, Norway

Biography

Knut E. A. Lundin is Professor of Medicine and Head of Clinical Education, Faculty of Medicine, University of Oslo. He is a Consultant Gastroenterologist at Oslo University Hospital, Rikshospitalet. He completed his scientific training at the Institute of Immunology with a MD degree in cellular immunology in 1990. Since the 1980s he has worked with Professor Ludvig M. Sollid on the immunobiology and clinical aspects of the small intestine with particular focus on CD. His highest ranking scientific achievement was published in 1993 when gluten specific T cells from the small intestine of CD patients were reported. This powerful tool was used to define the gluten peptide antigens driving the disease. In recent years focus has also been paid to NCGS. Other clinical and scientific areas involve "regular" and "complicated" CD, refractory CD, IBD and other GI disorders in a tertiary referral hospital setting.

He has training in all aspects of diagnostic and therapeutic endoscopy. Together with Prof Sollid he arranged the 14th ICDS in Oslo in 2011. He has been involved in the founding of the International Society for Study of Coeliac Disease in 2011 and the European Society for Study of Coeliac Disease in 2015 and holds a board position in both societies. He has published nearly 200 papers as original papers, reviews and book chapters and has been cited in 6500 other publications.

Oats in coeliac disease - do we have the full picture?

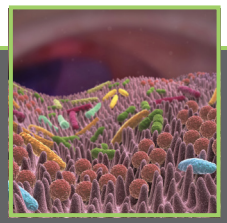
Abstract

Background: Wheat, rye and barley are closely related cereals. All are toxic to CD patients due to the presence of certain peptide sequences that are present in many copies and variants. The common denominator of these peptides is that they are targets for the enzyme Transglutaminase 2, leading to deamidation of glutamine residues and presentation to intestinal T cells. Whether oats are toxic in coeliac disease has been a matter of debate for decades.

Clinical challenge approach: Several clinical challenge studies with pure, uncontaminated oats have enrolled approximately 150 adults and 150 children. Only one of the studies was carried out double blinded and controlled. Patient drop out has been considerable. Cross sectional serology studies and follow up biopsy cohort studies have been performed. The conclusion of all but one of the studies (small case series study) was that oats are safe for people with CD.

Immunobiological approach: In a clinical challenge study we found one oats intolerant patient. Two were identified from clinical practice. The intolerant patients, but not oats tolerant patients, had a strong intestinal T-cell response towards oats. The T cells were restricted by HLA-DQ2, they recognised a peptide similar to but not identical to those found in wheat. The immunogenicity of the peptide was enhanced by tissue transglutaminase mediated deamidation. More recent studies show increased levels of intraepithelial lymphocytes and proinflammatory cytokines after oats ingestion. Immunological cross reactivity between barley and oats further adds to the picture.

Interpretation: The vast majority of people with CD can eat GF oats but there may be a small number who are intolerant to oats. This is compatible by different T cell repertoires among groups of patients. Oats toxicity should be included in the clinician's toolbox investigating complicated and 'non responsive' CD.

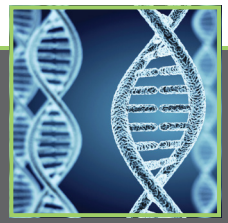
Prof Ludvig Sollid
Director of the Centre of Immune Regulation, Oslo, Norway

Biography

Ludvig M. Sollid is the Director of the Centre for Immune Regulation, Oslo, which is a Research Council of Norway and FOCIS (Federation of Clinical Immunology Societies) centre of excellence. He is also a Professor at the University of Oslo and a Senior Consultant at the Oslo University Hospital, Rikshospitalet.

His research interest is the genetic basis of autoimmune diseases. His group has made important contributions to the understanding of the molecular basis of coeliac disease, in particular the association between the HLA-DQ genes and coeliac disease, the existence of gluten reactive (HLA-DQ restricted) T cells in the coeliac intestinal lesion, and the functional involvement of the primary autoantigen, transglutaminase 2, in this condition.

He has been recognised for his scientific contributions by several awards, notably the Research Council of Norway's Møbius Prize for Outstanding Research (Oslo, 2006), the Warren Prize for Excellence in Celiac Disease Research (San Diego, 2007), the Rank Prize in Nutrition (London, 2010) and the United European Gastroenterology Research Prize (Amsterdam, 2012). He currently serves on the editorial boards of Mucosal Immunology, Scandinavian Journal of Immunology, Tissue Antigens, Genes and Immunity and Gastroenterology.

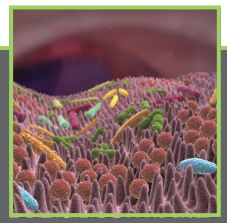
Therapeutic advances in coeliac disease

Abstract

There is an unmet need for novel treatments of coeliac disease that can replace the current treatment of dietary gluten avoidance, either in part or completely. Better insights into the mechanism of the disease have spurred a wave of efforts to establish such new alternative treatments.

Coeliac disease is caused by an inappropriate immune response to gluten peptides that have been post translationally modified (deamidated) by the enzyme transglutaminase 2 (TG2). CD4+ T cells recognising deamidated peptides presented by the disease associated HLA molecules DQ2.5, DQ2.2 and DQ8 orchestrate the response that leads to the pathology of coeliac disease. These gluten peptides are rich in proline (P) residues and hence resistant to degradation, and they contain glutamine (Q) residues typically present in the sequence QXP which are targeted for deamidation by TG2. The new therapies can broadly be categorised into approaches that either aim to prevent gluten from stimulating T cells and approaches that aim to modify the immune response to gluten. In the former category are: (1) grain modification, (2) polymers sequestering gluten, (3) glutenases, (4) epithelial barrier modifiers, (5) TG2 inhibitors and (6) blockage of HLA peptide presentation. In the latter category are: (7) anti cytokine therapy, (8) peptide therapy targeting T-cells, (9) anti B-cell therapy, (10) blockade of lymphocyte homing to intestine and (11) topical steroids. An update on the status of the various approaches will be given.

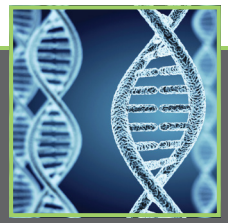
The assessment of effect of intervention relies on good surrogate markers of disease activity. Tests that are reliable, effective and cheap are currently lacking. This is a hurdle for the transition of new therapies into clinics. Thus establishment of good, non invasive, markers of disease activity should be a priority.

Prof David Pritchard
Professor of Parasite Immunology,
Faculty of Science,
University of Nottingham

Biography

David Pritchard is a Professor of Parasite Immunology, School of Pharmacy, University of Nottingham. Following a degree in Zoology, he became interested in the way a variety of organisms interact with the human body. The consistent theme of his research is the development of a sound understanding of the ways bacterial and nematode pathogens, insects, plant products and drugs interact with the physiological systems of the human body. His time in industry led him to exploit the pro-allergic properties of parasitic nematodes *(Ascaris suum)* to develop drugs to treat asthma in humans. Later, he sought a more adventurous and intellectually challenging career, in Papua New Guinea, on Karkar Island, where he and others discovered that the hookworm parasite of humans, *Necator americanus*, regulated the immune system but was partially controlled by the allergic phenotype. Professor Pritchard proposed that the immune regulatory properties of *Necator americanus*, could be harnessed, with controlled infection acting as a living drug, to treat immunological diseases. However, in the tropics, the real home of the hookworm, hyperinfection is a major cause of anaemia, given the blood feeding habit of the adult worm in the human gut. Therefore, vaccines also form part of his research. During a Wellcome Trust funded sabbatical at Leicester University, he manufactured the first cDNA libraries from *Necator americanus* and these libraries were donated

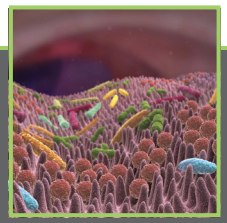
to laboratories worldwide to support hookworm research. His international reputation in each of these research fields has led to regular invitations to speak at conferences nationally and internationally. In parallel, the research output from these studies is published with regularity, with ~200 publications overall.

Could hookworms act as a living drug for coeliac disease?

Abstract

To facilitate research in vaccine development, and therapeutic intervention with hookworms, safe administration protocols have been developed following extensive studies in human volunteers. A unit has been established at the University of Nottingham to “manufacture” the infective stage of the hookworm life cycle to c GMP standards. The unit has been awarded an MHRA manufacturing licence in the UK, and FDA approval to ship and use infective larvae in volunteers in the USA. As a result, human volunteers are currently under challenge with hookworms in vaccine trials in Washington DC, sponsored by the Sabin Vaccine Institute and in collaboration with George Washington University. Hookworms are also currently under trial as therapeutics in a number of autoimmune diseases, and some efficacy has been shown in coeliac disease following clinical studies in Australia.

The presentation today will describe our current knowledge of the immunobiology of natural hookworm infection, and the origin of the isolate currently used in clinical trials worldwide. Details will be given of the hookworm manufacturing process in the UK, and the safety and vaccination studies already completed. Finally, the results of a trial with hookworms in patients with coeliac disease will be presented. By the end of the presentation, the audience will have hopefully developed a full understanding of the biology of *Necator americanus*, and be able to make an informed decision as to whether the application of this living drug to coeliac disease and other autoimmune diseases is a sensible option.

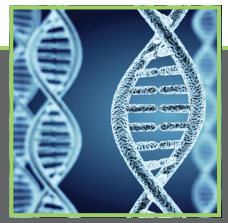



Helen Crocker
Research Officer, Nuffield Department of Population Health,
University of Oxford

Biography

Helen Crocker is a Research Officer in the Nuffield Department of Population Health at the University of Oxford. Helen joined the department in 2010, where she was involved in a study piloting the use of patient reported outcome measures (PROMs) in six different long term conditions in primary care. She is currently undertaking a DPhil, which is exploring quality of life in coeliac disease and patients' experiences of healthcare services accessed to diagnose and manage the condition. As part of the DPhil, she has developed a PROM (the Coeliac Disease Assessment Questionnaire (CDAQ)) to assess QOL in adults with coeliac disease.

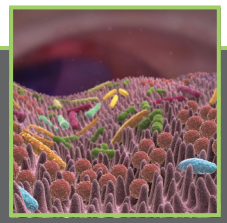
Alongside her DPhil, she is conducting a study, part funded by Coeliac UK, to assess the CDAQ's responsiveness to change. Prior to commencing research on PROMs, Helen completed a Master's degree in Social Science Research Methods at Cardiff University.

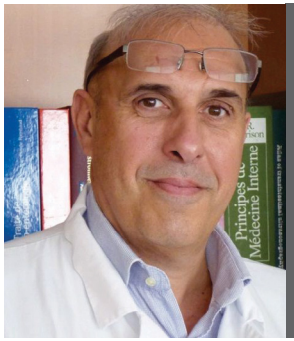



Measuring quality of life in coeliac disease: the development of the Coeliac Disease Assessment Questionnaire (CDAQ)

Abstract

Measuring quality of life (QOL) in people with coeliac disease allows us to understand the impact of the condition from the individual's perspective. This provides a fuller picture of the condition than can be achieved by assessing biomedical factors alone. QOL is measured using patient reported outcome measures (PROMs), which usually take the form of short questionnaires. A review identified two existing disease specific PROMs that measure QOL in adults with coeliac disease. Limitations were identified with both measures and therefore, a new measure, the Coeliac Disease Assessment Questionnaire (CDAQ), was developed according to current development guidelines. Candidate items for the CDAQ were developed following qualitative interviews with adults with coeliac disease, and refined through expert panels, cognitive interviews, and a translatability assessment. A survey of the draft CDAQ enabled the number of items to be reduced and scales to be generated. The final questionnaire has 32 items addressing five dimensions: stigma (8 items); dietary burden (8 items); symptoms (5 items); social isolation (5 items); and worries and concerns (6 items). The CDAQ is suitable for use in research studies, including clinical trials, and future plans include evaluating the questionnaire for use in clinical practice. The development of the CDAQ will be presented.



Prof Christophe Cellier
Professor of Gastroenterology, René Descartes University, European Georges Pompidou Hospital and INSERM, Paris, France

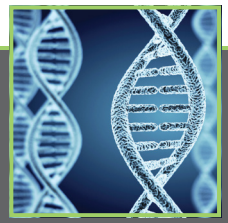
Biography

Christophe Cellier is Professor of Gastroenterology at the René Descartes University and Head of the Department of Gastroenterology and Digestive Endoscopy at the European Georges Pompidou Hospital, both in Paris. He is the coordinator of the French national network for patients with difficult malignant complications (refractory sprue and lymphoma) supported by INCA the French Cancer Institute. Professor Cellier was a former president of the French Digestive Endoscopy Society is the current President of the French Celiac Disease Study Group and a Member of the research unit of intestinal immunology, INSERM, Paris, France. For the past 20 years Professor Cellier has been involved in clinical and translational research in CD and he has more than 100 peer reviewed publications on CD and its complications.

Refractory coeliac disease and malignancy in coeliac disease

Abstract

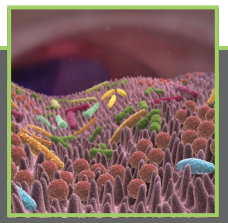
Refractory coeliac disease (RCD) is defined by persisting malabsorption and villous atrophy (VA) after one year on a strict gluten-free diet (GFD), assessed by a dietitian. After exclusion of other causes of intestinal VA a diagnosis of RCD can be made. There are two subgroups: RCDI is hardly distinguishable from active CD, RCDII has a severe clinical presentation and a very poor prognosis and frequently progresses to overt enteropathy associated T-cell lymphoma.

The mean age at diagnosis is around 50 years and it is two to three times more common in women than men, regardless of type. Patients with RCDI and RCDII are refractory to a GFD in roughly one third and half of cases, respectively. Diagnosis of RCDI relies on endoscopic assessment of the upper GI tract with intestinal biopsy and histological examination that is similar to that found in active CD with VA and increased normal IEL. Diagnosis of RCDII is more specific looking at a combination of the number of particular T-cells, T-cell surface receptor complexes and rearrangements in duodenal biopsies. Other diagnostic techniques used in RCDII include capsule endoscopy, radiological imaging of the small bowel, magnetic resonance imaging and computed tomography scan (CT-scan). Besides the diagnosis of persisting VA, capsule endoscopy allows the visualisation of any ulcers along the GI tract which can be found in RCDII patients. In conclusion, upper endoscopy, capsule endoscopy and abdominal imaging are essential for diagnosis and assessment of RCD.

The treatment of RCDI may require topical steroid (budesonide) and immunosuppressive drugs (azathioprine). RCDII may benefit from autologous stem cell transplantation, but targeted therapy, such as anti-IL15 monoclonal antibodies, are currently under evaluation. EATL may benefit from chemotherapy (anti-CD30 monoclonal antibodies are under evaluation) and debulking surgery if possible.

The concept of RCD has recently emerged and refers to two distinct entities sustained by two different pathogenic mechanisms. Diagnosis requires small bowel investigations (device assisted enteroscopy, videocapsule endoscopy, CT–scan, MRI and TEP scan) and very specialised techniques of IEL analyses (immunohistochemistry, molecular biology, flow cytometry) since the risk to progression to overt lymphoma is high. No clear cut treatment strategy is available and European Networking is mandatory on this field.

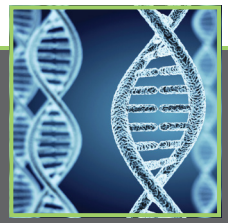



Prof Simon Murch
Professor of Paediatrics and Child Health, Warwick Medical School

Biography
Simon Murch is Professor of Paediatrics and Child Health at Warwick Medical School. Before taking up this post, he was Senior Lecturer in Paediatric Gastroenterology at the Royal Free and University College School of Medicine, London. His clinical interests include paediatric inflammatory bowel disease, coeliac disease, food allergy and complex inherited enteropathies. He was the leader of the international IBD Working Group for the World Congress of Paediatric Gastroenterology in 2004, and has been a member of national and international working groups in paediatric food allergy.

Non coeliac gluten sensitivity

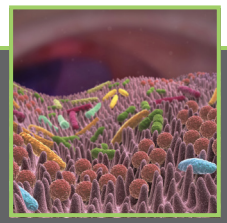
Abstract
Increasing numbers of people report intolerance to wheat in the diet, most of whom do not have coeliac disease. Within the last few years there has been increasing recognition of a distinct illness, with multisystem manifestations in the absence of the gut mucosal changes that characterise coeliac disease. Non coeliac gluten sensitivity (NCGS), perhaps better termed non coeliac wheat sensitivity, manifests with a varying combination of abdominal, neurological, cutaneous and non specific general symptoms. In all probability, it does not reflect a single disease entity.

Overlapping wheat induced disorders include non IgE mediated food allergies and allergic dysmotility. Components of wheat that may have distinct biological effects include the p31-43 component of gliadin that induces innate immunity, the morphine like wheat exorphins and the amylase trypsin inhibitors. Specific neurological features such as gluten ataxia appear equally common in NCGS and true coeliac disease.

Studies of wheat exclusion in NCGS have been hindered by the lack of homogeneity in diagnosis, and the overlap in symptoms such as IBS induced by mast cell mediated responses to wheat proteins and by the fermentable carbohydrate moieties (FODMAPs). Thus the disorder remains controversial. Mucosal changes include an increase in intraepithelial lymphocytes and increase in innate immune responses and expression of individual cytokines such as interferon-□. There are however no specific diagnostic changes and likewise no clear biomarker in peripheral blood.

The triggering of innate immune responses may represent an element of plant host defense against insect predation. Remarkably few insects can predate wheat and all possess specific salivary or intestinal enzymes (which humans do not). Insect transglutaminase and gliadin like peptides are pivotal in the invertebrate encapsulation reaction, which may be recapitulated in coeliac mucosa. The amylase trypsin inhibitors in wheat may also have evolved to inhibit enzymatic degradation of wheat in predators. Thus wheat ingestion without adverse effect may require adequate breakdown prior to absorption, and individual predisposition to wheat induced toxicity may be at least partly based on individual degradative capacity.

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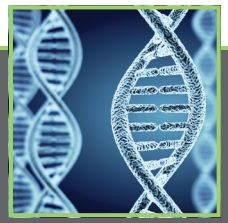
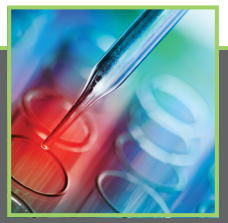
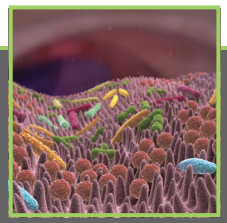




Poster competition abstracts

Entries to the Coeliac UK Research Conference 2016 poster competition. There is a £500 prize for the best abstract. The lead author may use the prize money to help pay towards attendance at an international event to increase dissemination of their research.

The rising incidence of classical and non-classical coeliac disease in South East Scotland

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Abstract
Introduction
The incidence of coeliac disease (CD) is increasing in many countries, including Scotland, and continues to increase. Our aim was to update our previous research into the incidence and presentation of CD in Lothian, Fife and Border regions of Southeast Scotland (SES).

Background
All positive anti-tissue transglutaminase (anti-TTG) results from SES are reported to the clinical lead for the regional coeliac service, at the Royal Hospital for Sick Children in Edinburgh and followed up. A centrally held database was cross checked against local databases within the Region. Depending on antibody level and symptoms, most patients still will have their diagnosis confirmed by biopsy. A retrospective cohort study of electronic case records of CD diagnoses was performed. The number of serology tests requested in under 16s in Lothian and Fife (these go to a central laboratory) was also assessed as a proxy for increasing awareness.

Results
224 patients (149 female, 75 male) were diagnosed with CD in Southeast Scotland over the study period. Median age at diagnosis was 7 years 6 months (range: 1 year 65 days to 16 years).

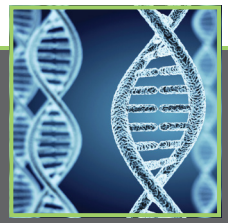
Incidence increased from 2010 to 2014 (13.6 to 23.2/100 000). Classical cases rose from 6.6/100 000 in 2010 to 14/100 000 in 2014. Non classical cases showed a similar rise from 3.9 to 8.3/100 000 between 2010 and 2014.

In addition, 16 asymptomatic cases were identified by screening individuals with associated conditions, and in 6 cases the presentation was unknown.
Serology testing from Lothian and Fife is sent to a central laboratory (accounting for 72% of the region's population). There has been an increase in the number of anti-TTG requests from 2274 in 2010 to 3489 in 2014. The percentage of positive tests rose.

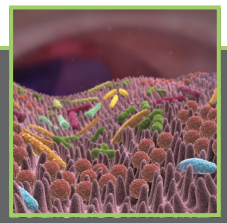
Conclusions
Over a five year period, the incidence has nearly doubled to over 23 per 100 000 in Southeast Scotland. The incidence of both classical and non classical presentations has risen.

The proportion of positive results is increasing confirming a true rise in the incidence of CD.

Better awareness and active case finding is clearly improving and one of the main reasons for the increase. Comparison again with other regions in Scotland (and UK wide) would be vital information for clinicians and Coeliac UK to help target awareness campaigns and improve diagnosis.





DQ typing is effective in coeliac disease screening in Down's Syndrome in South East Scotland

Authors
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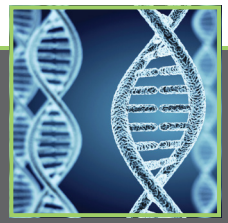
Abstract
Background
The association between Down's syndrome (DS) and coeliac disease (CD) was first described by Bentley in 1975. Many patients have GI related symptoms in childhood and CD is often considered as a cause in this 'at-risk' group. Screening programmes for CD have utilised DQ typing in a number of studies. New guidance from the British Society of Paediatric Gastroenterology, Hepatology and Nutrtion (BSPGHAN) suggests that it should now be a key part of assessment of all patients with DS. A negative HLA DQ 2.5, 2.2 or 8 result would essentially rule CD out and remove the need for further screening. We aimed to 'road test' the new BSPGHAN guidelines to assess their utility in clinical practice.

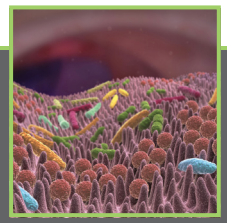
Methods
Patients with DS aged 16 years and under, in Lothian and Fife, were offered screening for CD between October 2014 and October 2015. Families were sent an information leaflet about CD and offered screening in the form of genetic testing with DQ typing and anti-tTG antibodies. Anti-tTG antibodies were measured in the regional biochemistry laboratory in Edinburgh. DQ 2.5, 2.2 and 8 typing was performed in the BTS national tissue typing laboratory in Dundee.

Results
53 patients (27 male and 26 female) were screened, 30 in Lothian and 23 in Fife. Overall 49% were negative for the relevant DQ genotypes. No patients were found to have significantly raised anti-tTGA. We were able to risk stratify those who were positive, according to a recent position paper.

Conclusions
CD predisposing HLA genotypes are present in 49% of DS patients in SES.
DQ typing is effective in excluding nearly half the children with DS from further regular screening for CD. The test can be performed at the earliest opportunity (even prior to gluten exposure) and should be accepted as a standard of care across the UK in DS. The burden of repeated venepuncture for the child and the financial cost of repeated screening tests is reduced. A positive haplotype allows risk stratification for future CD, with DQ2.2 being very low risk and two copies of DQ2.5 being the highest risk for any patient. Future targeted therapy (Nexvax 2) will require identification of the DQ type in CD patients, as it is specific for those with DQ2.5





The clinical and phenotypic assessment of seronegative villous atrophy; a prospective UK centre experience evaluating 200 cases over a 15 year period (2000-2015)

Authors
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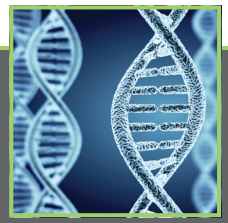
Abstract
Background and aims
Complex cases of seronegative villous atrophy (SNVA) have been attributed to coeliac disease or angiotensin-2-receptor blockers. However, this may not reflect SNVA in general. We aimed to provide diagnostic outcomes in all newcomers with SNVA and identify predictive factors.

Methods
Over a 15 year period (2000-2015) we prospectively evaluated 200 adult patients with SNVA at a UK secondary/tertiary care centre. A diagnosis of either seronegative coeliac disease (SNCD) or SN non CD was reached. Baseline comparisons were made between the groups, with 343 seropositive CD subjects serving as controls.

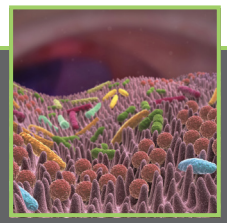
Results
Of the 200 SNVA cases, SNCD represented 31% (n=62) and SN non CD 69% (n=138). The HLA-DQ2/8 genotype was present in 61%, with a 51% positive predictive value for SNCD. The breakdown of identifiable causes in the SN non CD group include infections (27%, n=54), inflammatory/immune mediated disorders (17.5%, n=35) and drugs (6.5%, n=13; two cases related to angiotensin-2-receptor blockers). However, no cause was found in 18% (n=36) and of these 72% (n=26/36) spontaneously normalised duodenal histology whilst consuming a gluten enriched diet.

Following multivariable logistic regression analysis a novel independent factor associated with SN non CD was non Caucasian ethnicity (odds ratio 17.2, p=0.002); in fact, 66% of non Caucasians had Helicobacter pylori and/or alternate gastrointestinal infections. On immunohistochemistry all villous atrophy groups stained positive for CD8 T-cytotoxic intraepithelial lymphocytes. However, additional CD4 T-helper intraepithelial lymphocytes were occasionally seen in SN non CD mimicking the changes associated with refractory CD.

Conclusions
Most patients with SNVA do not have coeliac disease or angiotensin-2-receptor blocker enteropathy. Further, a subgroup shows spontaneous histological resolution whilst consuming gluten. The presence of non Caucasian ethnicity should prompt a search for an infective aetiology. The role of phenotyping intraepithelial lymphocytes for diagnostic purposes can potentially be misleading.





Magniview zoom endoscopy for the detection of villous atrophy: a feasibility study

Authors
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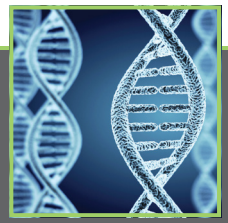
Abstract
Introduction
Coeliac disease (CD) is under diagnosed. Meta analyses have shown that for every patient diagnosed with CD, three to four go undetected. Lebwohl et al. (2013) showed that 5% of patients with CD had undergone a previous gastroscopy where the diagnosis had been missed. One way to solve the problem would be a routine biopsy approach, however this would be time consuming and expensive. Macroscopic markers of CD can be used by endoscopists to guide duodenal biopsy, however the sensitivity is low. We previously published an abstract which demonstrated a sensitivity of 41.6% for normal white light endoscopy (WLE) in detecting villous atrophy in a separate cohort of 89 patients. A method of increasing the macroscopic detection of coeliac disease would be advantageous. Magniview endoscopes are capable of 136x optical zoom without loss of definition. At this level of magnification it may be possible to detect the absence and blunting of villi. We aimed to assess the sensitivities of Magniview in detecting villous atrophy.

Method
Patients attending endoscopy with suspected CD or other gastrointestinal complaints as controls were prospectively recruited. Appearances of the duodenum were graded on a previously validated 3 point scale: normal, partial or marked villous atrophy. All patients received at least four biopsies from the second part of the duodenum and at least one biopsy from the duodenal bulb. Concurrently, endomysial (EMA) and tissue transglutaminase antibodies (tTGA) were taken prior to endoscopy. Macroscopic markers of CD were compared with villous atrophy on histology as the gold standard.

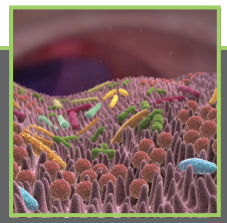
Results
A total of 99 patients were recruited. Six patients were excluded as it was deemed that the optimal peak of the operator learning curve had not been achieved until this point. Four were excluded due to poor tolerance and therefore Magniview zooming was not carried out, one further patient was excluded as the duodenum could not be reached due to an oesophageal tumour. The remaining 88 patients were included in the study (62.5% female, mean age 47.9).

Thirty nine (44.3%) patients were found to have villous atrophy on histology. Magniview correctly identified all 39 of these patients (100%). Magniview had the highest sensitivity and negative predictive value in detecting villous atrophy when compared to EMA and tTGA.

Discussion
Magniview had excellent (100%) sensitivity and NPV in detecting villous atrophy. It is superior to WLE and comparable to conventional coeliac serology in detecting villous atrophy. Magniview could be used as an effective screening tool for CD during gastroscopy. It could also potentially be used to target duodenal biopsy in patients with patchy villous atrophy to increase the yield of biopsy, although larger studies are required for validation.





How much gluten is the general population consuming and does it relate to symptoms?

Authors
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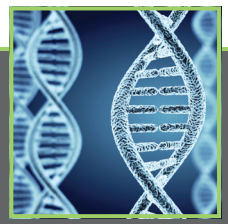
Abstract
Introduction
Gluten is a ubiquitous part of a western diet. It is implicated for causing an array of disorders, which have both intestinal and/or extraintestinal manifestations. Our understanding of this heterogeneous group of gluten related disorders is advancing, however uncertainty exists as to how much gluten the general population is consuming. This study aims to address this knowledge gap and also assess the prevalence of self reported gluten sensitivity within the general population.

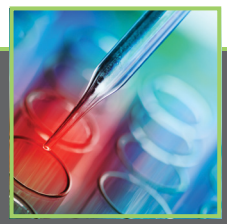
Methods
Between September and October 2015 a population based survey was undertaken in Sheffield, UK. Members of the general public, all over the age of 16 years, were invited to complete a modified version of a previously validated written questionnaire. This questionnaire assessed demographic information, GI conditions and also determined the presence of gluten sensitivity (GS).

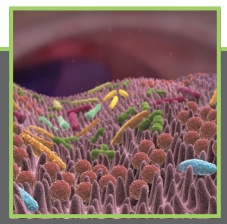
In addition, total gluten consumption was calculated using a food frequency questionnaire. Participants were asked about their use of a gluten-free diet (GFD), and whether they had seen a healthcare professional for their symptoms. A diagnosis of coeliac disease (CD) was determined if individuals had a doctor's diagnosis of CD, and were also taking a GFD.

Results
1003 adults completed the population based survey (59% female, median age 31 yr (16 - 86 yr). The mean consumption of gluten per day for this group was 13.2 g (sd = 9.2 g). The self reported prevalence of GS was 32.5% (326/1003, female 70% [$p < 0.0001$], age range 17 – 82, median age 35 yr), with 3.7% (38/1003) on a GFD and 1.1% (12/1003) having CD. Individuals with GS had an increased prevalence of fulfilling the Rome III criteria for irritable bowel syndrome (IBS), in comparison with those without GS (31.3% vs. 5.61%, odds ratio 7.66, $p < 0.0001$). In addition, mean daily consumption of gluten was considerably lower in this GS group compared to the non GS group (10.8 g vs. 14.4 g, $p <0.0001$).

Discussion
This is the first study assessing gluten consumption in a UK population. Findings from our work highlight that sensitivity to gluten based products is common, and that affected individuals have a higher prevalence of IBS. Although only a minority of individuals maintained a gluten-free diet, individuals with gluten related symptoms evidently were electing to reduce their gluten consumption.





Is that gluten-free? Living with coeliac disease in the UK: a qualitative study

Authors
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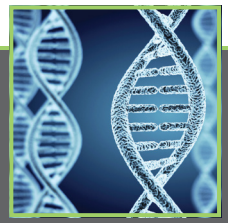
Abstract
Introduction
Coeliac disease (CD) is an autoimmune disorder that affects, on average, 1% of the general population. To date, there is no cure for this illness; however it can be managed by adhering to a strict, lifelong, gluten-free diet (GFD). Whilst the literature on its immunology and physiopathology is extensive, there is a paucity of research on the psychosocial impact that this chronic illness has on those affected by it. This gap in the literature is particularly evident within the research on CD and its psychosocial implications on people with this illness who live in the United Kingdom.

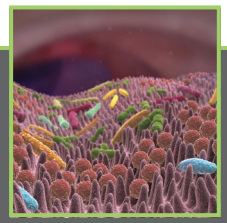
The aim of this study was to explore the lived experiences of adults with CD in relation to their chronic illness and GFD. Furthermore, this study aimed at understanding the quality of the experiences in relation to CD and the need to adhere to a strict GFD, in order to understand what factors constitute a hindrance, and what factors could possibly help improve emotional and psychological wellbeing in people with CD in relation to the day to day management of their condition.

Methods
The participants were invited to take part in the study through the use of a social media platform. As a result, 25 adults with diagnosed CD volunteered (80% female, mean age 35.2 yr, mean time since diagnosis 9.3 yr). Narratives were collected via an exchange of emails using the Critical Incident Technique (CIT). The participants were asked to recall positive and negative incidents related to their CD, how these incidents made them feel, and why they believed they felt that way. The data was then analysed qualitatively using Interpretative Phenomenological Analysis (IPA).

Results
The participants reported a total of 79 negative and 33 positive incidents and feelings in relation to CD, that were subsequently found to pertain to four main themes: longing for normality; making sense of CD; attitudes towards eating out; and need for validation. Whist the first three themes had, to varying degrees, been found in previous studies, the need for validation appears to constitute a new finding within the psychosocial aspects of CD. Whilst many participants showed confidence in their ability to follow the diet, and accepted their diagnosis, they often struggled most with others' perceptions and attitudes towards CD, and similarly felt most positively about their condition when others showed great understanding of CD, therefore offering validation of CD.

To conclude, the range of negative and positive experiences in relation to CD showed how this chronic illness can often impact more than just the person's physical wellbeing. Psychosocial aspects need to be considered in the treatment of CD. Raising awareness and understanding of CD among the general population may impact positively on the emotional wellbeing of people with CD in relation to their condition.

Depression in coeliac disease and the link with gluten-free diet adherence

Authors
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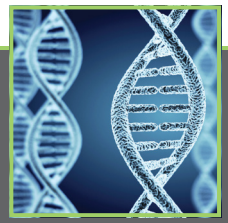
Abstract

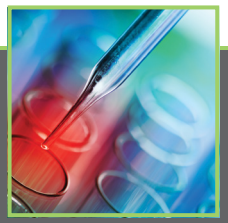
Introduction
Psychological symptoms including those associated with depression and anxiety are common in coeliac disease (CD). In the absence of gastrointestinal symptoms, depression may actually be the only indicator of potential CD. A meta analysis of adherence behaviour (eg medication or behavioural treatment) in other illnesses found that patients displaying depressive symptoms were three times less likely to adhere to medical treatment recommendations. Despite research linking depression and CD, the extent and nature of the relationship, as well as the impact on gluten-free diet (GFD) adherence are currently unclear. This systematic review had two primary aims: firstly, to determine the incidence of depression/depressive symptoms in patients with CD compared to healthy populations and/or other illness conditions; and secondly, to assess the impact of depressive symptoms on GFD adherence. A related aim was to document the proposed mechanisms responsible for this relationship.

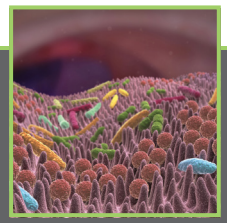
Method
A systematic literature search was conducted across several electronic databases indexing both medical/gastroenterological and psychological journals. Studies were included if they: (1) measured depression in patients with CD and included a control group of healthy participants or another illness condition (eg diabetes); or (2) measured depression in patients with CD and measured GFD adherence; or (3) compared depression in patients with CD at different stages of treatment (eg newly diagnosed/pre-GFD treatment vs established GFD).

Results
Forty four studies were included. There was significant heterogeneity in the measurement of both depression and GFD adherence across the included studies. Depression was determined using a range of validated depression rating scales, diagnostic interviews, retrospective review of medical notes, and as part of a wider psychological wellbeing or quality of life assessment. Adherence was measured using serological and histological tests, dietitian interview, visual analogue scales, categorical self reports (eg full vs partial vs non adherent), and validated rating scales (coeliac specific or adapted from adherence measures for other behaviours/illnesses). The degree of variation in measurement and reporting prevented meta analysis; however, a narrative synthesis of the data suggested that there is good evidence for the heightened incidence of depression in CD compared to healthy controls. It is less clear whether individuals with CD are more prone to depression than individuals with other chronic health conditions. Where directly analysed, there was also evidence for the negative impact of depression on GFD adherence. Potential mechanisms to explain the link between the two conditions included gluten exposure in newly diagnosed/poorly treated patients, possibly via deficient serotonin metabolites resulting from malabsorption of nutrients; psychosocial reaction to the restrictions of the GFD; and the comorbidity of CD and other gastrointestinal or autoimmune conditions.

Discussion
Depression in CD is common. Regardless of the direction of the relationship with GFD adherence (likely bidirectional), patients displaying comorbid depression had poorer adherence and may require independent psychological treatment to experience symptom relief and reduce the negative impact of depression on adherence and quality of life.





Outcomes in coeliac disease: a qualitative exploration of patients' views on what they want to achieve when seeing a dietitian

Authors
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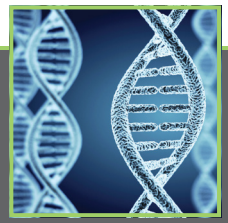
Abstract
Introduction
Coeliac disease (CD) is managed by lifelong adherence to a gluten-free diet (GFD) which many patients find challenging. Outcome measures in CD are usually based on a medical model which includes measuring serum IgA tissue transglutaminase and IgA endomysial antibodies and repeat biopsies. Complementing these, but not explicit in outcome measures, is patient involvement through shared decision making which is central to behaviour change skills used by dietitians. Dietitians have the potential to facilitate GFD adherence but patients with CD describe receiving mixed support from dietitians. The aim of this qualitative study was to explore the preferences for diet and nutrition related outcomes measures of CD patients and their family or carers.

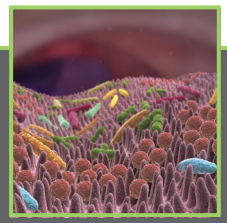
Methods
Adult participants with CD or adult carers of children with CD were invited through Coeliac UK and Local Coeliac UK Groups by web advert and email. Ethical approval was given by the University of Hertfordshire and participants gave written consent before taking part in a telephone or face to face interview or focus group lasting 20 - 75 minutes. A semi structured topic guide, developed with patient input, was used and interviews were audio recorded and then transcribed and analysed using a framework method to develop themes. Data collection continued until saturation was reached.

Results
29 adult patients and five parents of CD children participated. The mean ± sd ages of the adult patients and children were 55.4 ± 14.9 and 10.8 ± 4.1 yr respectively and interviews were undertaken a mean of 7.4 ± 8.4 yr after diagnosis with CD. Four main outcome related themes emerged: (1) Participants wanted information specific to their lifestyle and time since diagnosis, focusing on food containing gluten, practical issues, prescribable items and general nutrition. (2) The degree of satisfaction with the consultation process impacted on participants' experience, including the dietitian's CD expertise, consistency of dietitian seen and the frequency and length of appointments. (3) Concerns about short and long term health were important and focused on risk of osteoporosis, unwanted weight gain and the 'dangers of [high levels of] sugar in gluten-free products'. (4) Clinical monitoring, eg bone scans and antibody measurements, were mentioned but were not described as being of importance for most participants.

Discussion
The range of responses reflected the different needs of CD patients at various times from diagnosis, with different levels of existing knowledge and, for some, complex comorbidities. This indicates the need for dietitians to identify what outcomes individual patients want to achieve at each consultation. The need for flexible outcomes and how these might be measured raises a challenge for healthcare commissioners. The concerns about long term health and limited 'healthy' GF products have received little attention in previous studies and merit further investigation. In conclusion, the outcomes preferred by CD patients and carers focused primarily on information and resources received and satisfaction with their dietetic consultation.





The development and validation of the Coeliac Disease Food Attitudes and Behaviours Scale

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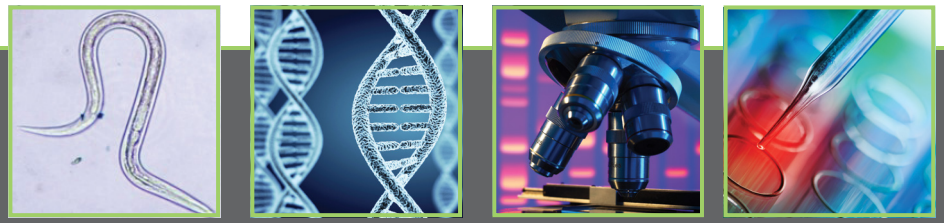
Abstract
Introduction
Previous studies on coeliac disease (CD) suggest that attitudes towards the gluten-free diet may contribute to the development of disordered eating patterns. This study describes the development and validation of the Coeliac Disease Food Attitudes and Behaviours scale (CD-FAB) to systematically measure these behaviours in CD.

Methods
Following online focus groups with 12 CD individuals, 33 potential questionnaire items were generated. These items were reviewed by service users and then distributed online to 100 adults with CD. Items were removed based on ceiling/floor effects and high inter item correlations (> 0.7), with 13 items being retained, and exploratory factor analysis was conducted. Subsequently, an online validation study was conducted to assess the psychometric properties of the CD-FAB in 200 individuals with CD.

Results
The CD-FAB had 13 items distributed across three subscales assessing attitudes and behaviours towards food, which explained 65.3% of the variance. The CD-FAB and its subscales, had high internal consistency (Cronbach's alpha > 0.7) and psychometric validation indicates both convergent and discriminant validity. Greater scores on the CD-FAB were associated with impaired quality of life, reduced psychological wellbeing and increased disordered eating scores.

Discussion
The CD-FAB is a reliable and valid measure of food attitudes and behaviours in CD. As a new disease specific instrument, it is likely to be a useful tool for evaluating food concerns in individuals with CD in a clinical setting, and for further exploring the development of disordered eating patterns in CD. Further research is required to assess the full potential of the CD-FAB.



Visualising the self care of coeliac disease

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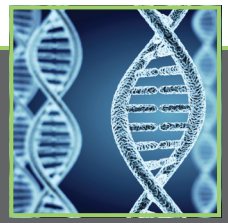
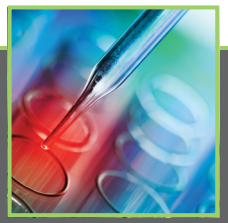
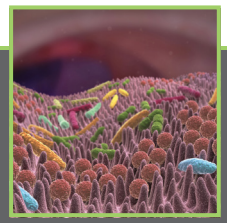
Abstract
Coeliac disease is managed daily by patients via the gluten-free diet, and while research on chronic illness has found that individuals have been actively sharing and communicating this experience via the internet and social media, Ziebland and Wyke (2012) have noted that, there were very few places, where people could learn to tell their story and visualise experience with disease. While there now exist many smartphone apps that allow users to share photos, videos and memes via social media, there are currently very few apps that have tools that enable patients to easily visualise their experience with chronic disease, coeliac disease in particular.

Spoonie Living has been developed by the author as a smartphone app that gives chronic illness and chronic pain sufferers a visual tool to help them with the process of learning how to manage and express their symptoms and experiences. The app also works as a research toolkit that can be adapted to be used with small groups of patients to visually measure their experience of the gluten-free diet at the start of diagnosis, and at specific periods where sticking to the gluten-free diet may be challenging (such as travelling, seasonal holidays, and relocation).

With the use of sticker overlays that are themed to help them express their lived experience of self managing special prescribed diets, pain medications, and the self care of chronic illness symptoms – individuals can use this app as an expressive bridge between their smartphone photography and the visual social media apps they already use to communicate their experience of self care, whether this be Instagram, Twitter or Facebook. This poster is a brief introduction and analysis of how this tool works, and has been developed based on digital sociological research into how people share the self management of coeliac disease via social media.





In vitro fermentation of 'gluten friendly bread': impact on colonic microbiota and metabolites in healthy and coeliac subjects

Authors
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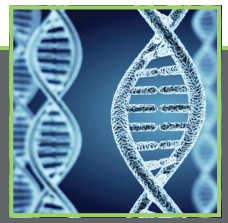
Abstract
Introduction
Patients with coeliac disease (CD) have altered intestinal microbiota compared to healthy individuals. Generally, a gluten-free diet alleviates many of the symptoms, but somewhat surprisingly, it does not completely restore healthy microbiota profiles. Thus, the long term result may be weaker immune defenses and chronic inflammation.

Recently, a new and innovative gluten detoxification method has been developed (PCT/IB2013/000797). It is usually referred to as "gluten friendly" and lies in the application of microwave energy for a few seconds to hydrated wheat kernels. This technology induces structural modifications to endosperm components which abolish the antigenic capacity of gluten and dramatically reduce, in vitro, the immunogenicity of the most common epitopes involved in CD, without compromising both the nutritional and technological properties necessary to process flour into bread, pasta and other baked goods.

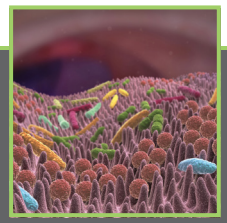



Aims and methods
This study aimed to investigate the in vitro effects of gluten friendly bread on the intestinal microbiota and metabolites composition of healthy and coeliac individuals.

A validated three stage continuous fermentative system simulating the proximal, transverse and distal parts of human colon (vessel 1, 2 and 3, respectively) was used to resemble the complexity and diversity of the intestinal microbiota. Main bacterial groups of the faecal microbiota were evaluated using 16S rRNA-based fluorescence *in situ* hybridization (FISH). Potential effects of the gluten friendly bread on microbial metabolism were studied measuring short chain fatty acids (SCFAs) by HPLC.

Results
Gluten friendly bread showed positive modulations of the microbiota composition, as well as increases in SCFA concentrations in healthy and coeliac donors. Following gluten friendly bread fermentation, beneficial modulations were seen in terms of bifidogenic effects in healthy and coeliac donors, as well as growth in Clostridium clusters XIVa+b numbers in coeliac subjects. Although acetic and propionic acids decreased in V1 from healthy individuals, increased levels of acetic were found in V2 and V3, and butyric in V3. Moreover, in the case of coeliac individuals, we found increased levels of acetic and propionic in V1, as well as propionic in V2.

Conclusions
Although further in vivo investigations are needed, this study provides encouraging findings supporting the utilisation of gluten friendly products with a positive effect on the intestinal microbiota and metabolites composition in people with CD. Furthermore, High-Performance Computing techniques are ongoing to better understand how the 3-dimensional structures of the gluten proteins at the molecular level affect their functional characteristics.

Does restriction of gluten-free prescription foods affect people with coeliac disease?

Authors
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Abstract
Introduction
A gluten-free diet (GFD) is the mainstay of treatment for coeliac disease (CD). Since the late 1960s prescriptions for gluten-free foods have been widely available, helping CD patients maintain dietary adherence and reduce complications. In Scotland and Wales gluten-free foods are widely prescribed in accordance with the National Prescribing Guidelines. In England however, whilst the vast majority of Clinical Commissioning Groups (CCGs) are following this guidance some have chosen not to. This has led to the reduction or removal of prescriptions in certain parts of England. This cohort study examines what influence the restriction or removal of gluten-free food prescriptions may have on CD patients.

Methods
Between September and October 2015, CD patients and carers of CD patients were approached from 4 differing CCG areas (North Norfolk, West Suffolk, Oxfordshire, Vale of York). These CCG areas were specifically selected as areas where CCGs had either restricted or removed gluten-free prescriptions, over varying time periods (between 2 months and 3 years). All participants were asked to complete an online questionnaire, with information requested pertaining to prescriptions, availability of GF foods, costs incurred and what influence changes to prescriptions have had on health. Statistical analyses were performed using SPSS version 20.0.

Results
25.0% (894/3586) of invited individuals completed the online questionnaire (632F: 262M, mean age 59.2 years). Findings from each of the four CCG areas are presented in Table 1. Overall nearly 60% (514/894) of respondents felt less supported in the management of their condition due to changes in their prescription, with only 37.2% (333/894) currently meeting national guideline standards by having an annual follow up appointment with a healthcare professional for their CD. Patients' weekly expenditure had increased (median £8.62, range £0-35) and 6.7% (n=60) felt that the prescription changes had directly affected their health. Although not statistically significant, the greatest detriment to health was noted in those having complete removal of their GF prescriptions (North Norfolk 9.1%).

Discussion
Although this study is confined to only 2% (4/209) of all CCGs in England, it raises concerns as to how the restriction and removal of gluten-free prescriptions can affect patients with CD. Furthermore, two of the CCGs evaluated only implemented changes within the last 6 months, so findings may underestimate the true burden to patients. Given these findings, further work should now aim to establish whether prescription restriction is a false economy, as detriment may ensue due to poor dietary adherence and the development of serious long term complications.

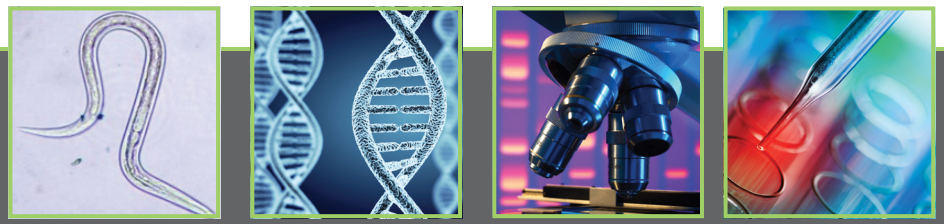
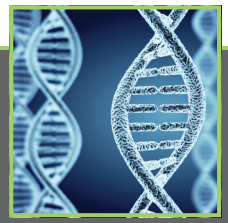
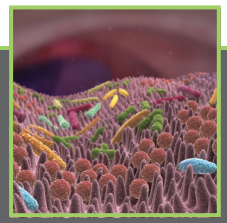


Table 1: Impact of changes to GF prescribing policies by CCG areas

CCG	Changes to GF prescribing policy	Year of change	Recipients, n	Response, n (%)	Median weekly increase in expenditure to patients since change (£)	Impact on overall health , n (%)
Oxfordshire	Restriction of items and units	2012	1,719	278 (16.2)	11.78	14 (5.0)
North Norfolk	Removal of all GF prescriptions	2015	461	265 (57.5)	9.11	24 (9.1)
West Suffolk	Restriction of items and units	2015	441	81 (18.4)	5.11	7 (8.6)
Vale of York	Restriction of items	2014	965	270 (28.0)	9.34	15 (5.6)
Overall			**3,586**	**894 (25.0)**	**8.62**	**60 (6.7)**

The winner of our poster competition will be announced at the end of the Conference.

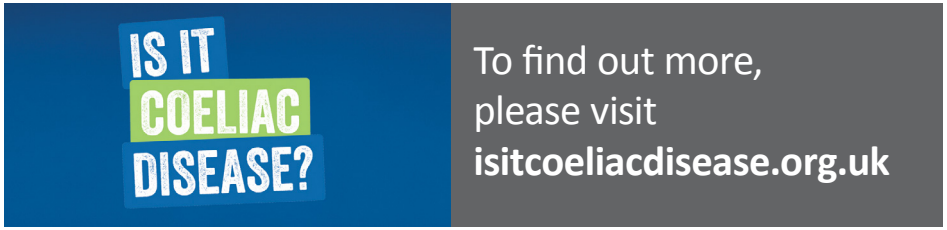
In 2016 we're asking: *is it coeliac disease?*

Coeliac UK will be continuing to focus on raising diagnosis rates for coeliac disease in 2016. We're looking for the estimated half a million people in the UK who are struggling with the ongoing symptoms and long term health risks of undiagnosed coeliac disease and dermatitis herpetiformis.

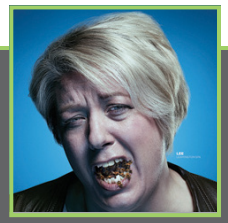
We want these people to ask themselves: *is it coeliac disease?*

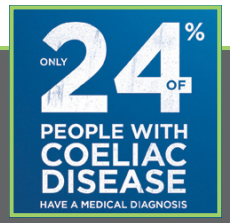
Launched last year, our campaign highlights some of the most common symptoms of coeliac disease crippling fatigue, bouts of diarrhoea, stomach pain, serious mouth ulcers, and invites those engaging with the campaign to take the first simple step towards diagnosis - completing the Coeliac UK online assessment[1]. Around 35,000 people completed this initial step in 2015.

We'll be refreshing our campaign in 2016 to focus on the symptom of unexplained or recurring anaemia, a key symptom linked to malabsorption caused by the damage to the small intestine in people with coeliac disease.



[1] Developed by Coeliac UK based on NICE Guidance for the recognition, assessment and management of coeliac disease





Healthcare professionals can also ask: *is it coeliac disease?*

If you're a healthcare professional and would like to join our campaign to find the estimated half a million people living in the UK with undiagnosed coeliac disease, there is plenty that you can do to help.

Screen IBS patients for coeliac disease

Around a quarter of those diagnosed with coeliac disease had previously been treated for irritable bowel syndrome (IBS). We believe that targeting IBS patients is a good way to improve diagnosis, and recommend screening clinics. NICE Guidance recommends screening for coeliac disease prior to an IBS diagnosis.

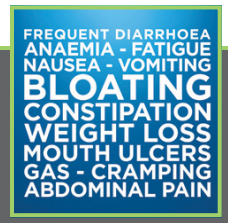
Offer testing for coeliac disease to patients with unexplained or recurrent anaemia

Research reports that iron deficiency anaemia occurs at coeliac disease diagnosis in 30 - 50% of patients and vitamin B12 or folate deficiency is also common. NICE guidance recommends offering testing for coeliac disease to anyone with unexplained iron, vitamin B12 or folate deficiency.

Update your knowledge

If it's been a while since you refreshed your knowledge of coeliac disease, or this is a new area of work for you, you can access a range of information and training tools at **www.isitcoeliacdisease.org.uk/healthcare-professional-resources**
Coeliac UK has produced a range of posters and an information leaflet for patients wanting to know more about coeliac disease, its symptoms and the diagnosis process. You can view all of the materials, including videos at **www.isitcoeliacdisease.org.uk/view-the-campaign**

And, you can order printed materials for your workplace at the following address **www.isitcoeliacdisease.org.uk/supporter-resources**

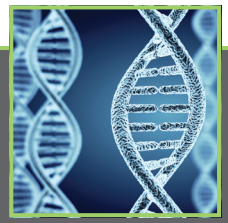


Coeliac UK's Healthcare Professional Membership

As a healthcare professional (HCP) or researcher with an interest in coeliac disease, you may wish to become a HCP Member of Coeliac UK. On joining, you will be able to access:

- early registration to the Coeliac UK Research Conference
- exclusive access to post Research Conference videos on our website
- our Electronic Food and Drink Directory, Gluten-free on the Move smartphone app, Recipe Database and Venue Guide
- hard copy of our Food and Drink Directory
- Crossed Grain magazine
- monthly electronic newsletter to support your patients with their condition and diet
- Professional eXG (quarterly electronic newsletter)
- your own personalised online Scrapbook where you can save all downloadable documents and bookmark the webpages that you find the most useful
- access to our online publications
- an online forum where you can share best practice and information with other HCP Members.

To join, go to **www.coeliac.org.uk/join-us/hcp** and complete the online form. Professional eXG is our quarterly electronic newsletter for HCPs, in each edition we have an article called 'People and Patients', written by HCPs to share best practice in the diagnosis and management of patients with coeliac disease. Recent articles have covered the management of patients with the dual diagnosis of coeliac disease and Type 1 diabetes and five top tips for providing follow up care to children with coeliac disease. If you are interested in writing for Professional eXG or would like to find out more we would love to hear from you, please contact Lorna at **lorna.gardner@coeliac.org.uk**

Coeliac UK's Research Fund

Coeliac UK is committed to commissioning and funding the highest quality research into coeliac disease (CD) and dermatitis herpetiformis (DH). Only by increasing the knowledge base around the condition can the long term vision of a world without CD be achieved.

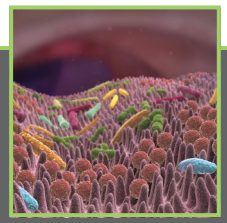
Since 2005 we have contributed nearly £2M to research projects across a range of fields of interest. To coincide with the review of our Research Strategy, later this year, and in the lead up to our 50th anniversary in 2018, we are driving a step change in the scale and ambition of our research programme. As part of this step change, we are developing a dedicated research fund to support the dreams and aspirations of patients and carers, clinicians and scientists alike for research into CD. We want to build a critical mass for future support of research and to encourage and inspire a new generation of researchers.

As well as commissioning and funding the very best research projects, we will build capacity in research into CD and DH, where there is currently a deficit, by encouraging the best candidates to embark on an early career in CD and DH; developing the joint funding of fellowships with the Medical Research Council.

Our funded projects will fill critical gaps in our knowledge and understanding of the condition, while addressing the shared priorities across the CD community.

To do this, we need to raise more money, specifically for research, to help realise the dreams and ambitions of patients and carers, clinicians and researchers today and in the future.

Find out more by visiting **www.coeliac.org.uk/Researchfund**

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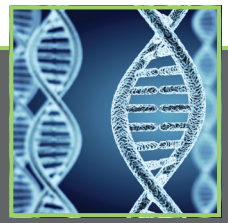



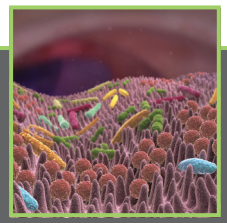


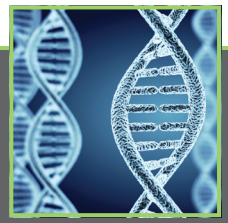

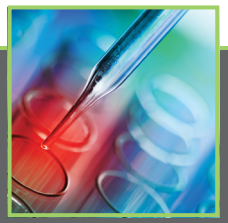

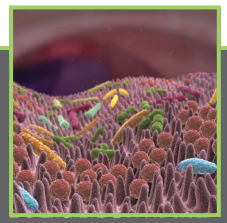

'Coeliac disease: current controversies and advances' has been approved by the Federation of the Royal Colleges of Physicians of the United Kingdom for 4 category (1 external) CPD credits

The Coeliac UK 2016 Research Conference is endorsed by:

BDA The Association of UK Dietitians
Centre for Education and Development
Endorsed by the BDA for CPD

BDA endorsement applies only to the educaitonal content of the learning activity

PCSG

The Primary Care Society of Gastroenterology's Spring meeting takes place 22 April in London.

For more information visit **www.pcsg.org.uk/events**

Visit **www.coeliac.org.uk/research** for more information on Coeliac UK's:

- Research Strategy
- funding opportunities
- previous Research Conference videos
- funded research.

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